

Amendment and Response
Serial No. 10/623,839
Art Unit: 2676

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims to the application.

1. (Amended) A method of decoding MPEG data comprising a plurality of macroblocks, each macroblock comprising a header and block layer data, said method comprising:

decoding the header of at least one macroblock using a [first processing element] processor; and

decoding the block layer data of said at least one macroblock using a [second processing element] variable length decoder, the [second processing element] variable length decoder being [different] separate from the [first processing element] processor.

2. (Previously Presented) The method of claim 1, further comprising:

receiving a plurality of rows of the MPEG data, each row comprising the plurality of macroblocks,

wherein decoding the header comprises decoding the header of a first macroblock on a first one of the plurality of rows while concurrently decoding the block layer data of a second macroblock on a second one of the plurality of rows.

3. (Amended) The method of claim 2, further comprising providing the block layer data of the first macroblock to the [second processing element] variable length decoder after decoding the header of the first macroblock.

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4. (Previously Presented) The method of claim 1 wherein at least one of decoding the header and decoding the block layer data comprises variable length decoding.

5. (Previously Presented) The method of claim 2, wherein receiving a plurality of rows of the MPEG data comprises receiving the plurality of rows of the MPEG data from memory.

6. (Previously Presented) The method of claim 2, wherein receiving a plurality of rows of the MPEG data comprises receiving HDTV video data.

7. (Previously Presented) A method of decoding MPEG data comprising a plurality of macroblocks, each macroblock comprising a header and block layer data, said method comprising:

decoding the header of at least one macroblock using a first processing element;

decoding the block layer data of said at least one macroblock using a second processing element;

decoding the header of at least one other macroblock using a third processing element concurrently with decoding of the header of said at least one macroblock using the first processing element; and

decoding the block layer data of said at least one other macroblock using a fourth processing element concurrently with decoding of the block layer data of said at least one macroblock using the second processing element.

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8. (Amended) An MPEG decoding system for decoding MPEG data comprising a plurality of macroblocks, each macroblock comprising a header and block layer data, said system comprising:

a [first processing element] processor for decoding the header of at least one macroblock; and

a [second processing element] variable length decoder for decoding the block layer data of said at least one macroblock, the [second processing element] variable length decoder being [different] separate from the [first processing element] processor.

9. (Amended) The MPEG decoding system of claim 8, wherein the MPEG data is organized into a plurality of rows, each row comprising the plurality of macroblocks, and wherein the [first processing element] processor decodes the header of a first macroblock on a first one of the plurality of rows, while the [second processing element] variable length decoder concurrently decodes the block layer data of a second macroblock on a second one of the plurality of rows.

10. (Previously Presented) The MPEG decoding system of claim 8, wherein the system is implemented on an integrated circuit chip.

11. (Previously Presented) The MPEG decoding system of claim 9, wherein the MPEG data comprises MPEG-2 video data and each row comprises at least one SLICE comprising the macroblocks.

12. (Amended) The MPEG decoding system of claim 8, further comprising a switch wherein the [first processing element] processor decodes the header of said at least one macroblock and the switch provides the block layer data of said at least one macroblock to the [second processing element] variable length decoder for decoding.

13. (Previously Presented) The MPEG decoding system of claim 11 wherein the first macroblock is from a first SLICE and the second macroblock is from a second SLICE.

14. (Previously Presented) An MPEG decoding system for decoding MPEG data comprising a plurality of macroblocks, each macroblock comprising a header and block layer data, said system comprising:

a first processing element for decoding the header of at least one macroblock;

a second processing element for decoding the block layer data of said at least one macroblock;

a third processing element for decoding the header of at least one other macroblock concurrently with decoding the header of said at least one macroblock using the first processing element; and

a fourth processing element for decoding the block layer data of said at least one other macroblock concurrently with decoding the block layer data of said at least one macroblock using the second processing element.

Claim 15 is cancelled without prejudice.

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16. (Amended) The MPEG decoding system of claim 8, further comprising a video decoding engine for reading the MPEG data from memory and providing the MPEG data to the [first processing element] processor.

17. (Previously Presented) The MPEG decoding system of claim 8 wherein the MPEG data comprises at least one HDTV video data.

Claims 18-20 are cancelled without prejudice.